



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,794	03/05/2002	Shinsuke Fukuda	P22035	2965

7055 7590 05/19/2003

GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER

GRAY, LINDA LAMEY

ART UNIT	PAPER NUMBER
----------	--------------

1734

DATE MAILED: 05/19/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/087,794

Applicant(s)

FUKUDA ET AL.

Examiner

Linda L Gray

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Detailed Action**

**Claim Rejections - 35 USC § 112**

- 1. Claims 5-6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.**

**Claim 6**, it is unclear if "a cutting protrusion" is the same protrusion in claim 5.

**Claim Rejections - 35 USC § 103**

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 3. Claims 1-3, 5-8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macaulay et al. (US 3,708,349) in view of Watts (US 3,614,383).**

**Claim 1**, Macaulay et al. teach a method of attaching separator 7/40 to electrode plate 20 including a separator arrangement step for arranging sheet-like separator 7/40 so as to cover both surfaces of plate 20, a separator bonding step for thermally welding separator 7/40 by applying heat along a to-be-bonded edge of separator 7/40 adjacent plate 20 providing a bonded portion having a width, and a separator cutting step for cutting off separator 7/40 at a substantially central part of the

bonded portion using any a suitable technique which can include heat (c 4, L 15, to c 6, L 68).

*Macaulay et al. do not teach specifics about the mechanism for bonding and cutting, i.e., bonding via a plate having a width equal to the width of the bonded portion and cutting via a heating plate.*

Watts teaches a bonding and cutting mechanism (Fig 2) including bonding via plate 22 having a width equal to the width of the bond and including cutting via heated plate 24. Watts indicates the mechanism to be simple in construction and inexpensively manufactured (c 2, L 21-38; c 5, L 29, c 8, L 13).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Macaulay et al. that bonding is via a plate having a width equal to the width of the bond and including cutting via a heating plate because Watts teaches such a bonding and cutting mechanism to be simple in construction and inexpensively manufactured and it is obvious to use a bonding and cutting mechanism is Macaulay et al. which will provide a further benefit where the bonding and cutting mechanism is not restricted to any particular arrangement but is open to different means for doing such.

**Claim 2**, in Macaulay et al. modified the bonding and cutting steps are performed in combination in one process by use of the single-unit heating plate having a protrusion 24 for cutting separator 7/40 with the unit serving as the first and second heating plate in common.

**Claims 5 and 7**, Macaulay et al. teach an apparatus for attaching separator 7/40 to electrode plate 20 including bonding and cutting members including a heated element to make a bonded portion having a width with separator 7/40 covering both sides of plate 20. The cutting mechanism may be heated and cuts in the central part of the bonded portion.

*Macaulay et al. do not teach the bonded and cutting mechanisms to be one unit with the bonder being a plate having a width equal to the width of the bonded portion and the cutter having a protrusion (claim 5) or a plate (claim 7).*

In view of Watts it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Macaulay et al. that the bonded and cutting mechanisms be one unit with the bonder being a plate having a width equal to the width of the bonded portion and the cutter cutting having a protrusion (claim 5) or a plate (claim 7) because Watts teaches such a bonding and cutting mechanism to be simple in construction and inexpensively manufactured and it is obvious to use a bonding and cutting mechanism is Macaulay et al. which will provide a further benefit where the bonding and cutting mechanism is not restricted to any particular arrangement but is open to different means for doing such.

**Claim 6**, in Macaulay et al. modified the bonding and cutting member is a combined heating plate with the cutting protrusion with heating plates for bonding arranged on both sides of the cutting heating plate with an interposed insulating material 64 therebetween and is provided with heaters at both end for heating the plates.

***Claims 3, 8, and 10**, Macaulay et al. modified do not teach a cushioning member opposite the bonding heating plate.*

However, cushioning members opposite a cutter are conventional to provide a resilient surface for receiving the cutter to ensure a complete cut, and for this reason it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Macaulay et al. a cushioning member opposite the bonding heating plate.

**4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macaulay et al. in view of Watts as applied to claims 1-3, 5-8, and 10 above and further in view of Lehmacher et al. (US 3,384,528).**

*Claims 4 and 9, Macaulay et al. modified do not teach a protective sheet interposed between the bonding heating plate and separator 7/40 (claims 4 and 9) with a device for supplying and taking up the film.*

Lehmacher et al. teach protective sheet 24 interposed between heating plate 15a/b and films bonded therewith including a device for supplying and taking up sheet

24 (c 2, L 69, to c 6, L 35). Conventionally, such films are used to prevent the bonded films from sticking to the heating plate.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided in Macaulay et al. modified a protective teach a protective sheet interposed between the bonding heating plate and separator 7/40 (claims 4 and 9) with a device for supplying and taking up the film.

Lehmacher et al. teach protective sheet 24 interposed between heating plate 15a/b and films bonded therewith including a device for supplying and taking up sheet 24 to prevent the bonded films from sticking to the heating plate as shown by Lehmacher et al.

**Conclusion**

**5.** Any inquiry concerning this or earlier communications should be directed Linda L. Gray at 703-308-1093, 6:30am-4:00pm, M-F. The examiner's supervisor, Richard Crispino, can be reached on 703-308-3853. Any general inquiries should be directed to the receptionist at 703-308-0661. The fax numbers are 703-305-7718 (before final) and 703-872-9311 (after final).

llg  
May 15, 2003

  
LINDA GRAY  
PRIMARY EXAMINER